PROJECT NUMBER : 6908
PROJECT TITLE : Smoke Condensate Studies
PROJECT LEADER : A. H. Warfield
WRITTEN BY : W. R. Morgan
PERIOD COVERED : December, 1991

I. UNEXTRACTED NICOTINE STUDIES

A. **Objective:** To determine whether there is a correlation between unextracted nicotine in filler and the delivery of NNK in MS smoke.

B. **Results:** Flash heating studies (700°C in air and nitrogen) of various tobacco fillers continued. Analysis of materials from 0.1 N and 1.0 N NaOH base digest samples proved difficult. The problem was a rapid loss of GC/TEA sensitivity after only a few injections of the work-up solutions. Filtration clean-up of the work-up solutions did not improve the analysis. Investigations into modification of the original sample preparation procedures are in progress. Preliminary results for the 0.1 N NaOH digests indicate that pyrorelease of NNK after digestion is still occurring. Results for the 1.0 N NaOH digest samples have not been obtained.

C. **Plans:** Continue work on the sample analysis problem. Expand study to non-burley based fillers. Begin experiments on flash heating of TPM.

D. **Reference:**

Morgan, W. R. Notebook No. 8905, p. 76.

II. REDUCTION OF MS TSNA BY REDUCING PREFORMED TSNA AND PYROSYNTHETIC TSNA PRECURSORS IN FILLER

A. **Objective:** Alter physical/chemical parameters which may be responsible for the appearance of TSNA in MS smoke.

B. **Results:** Analysis of the burley components fillers continued this month. Unreplicated filler and MS smoke TSNA have been obtained on four burley grades from crop years 1988-1990. Filler TSNA levels are similar; however, there are interesting variations in the MS smoke TSNA. A complete evaluation of these data cannot be made until the final analytical report, TPM, gas phase data, and replicate smoke and filler TSNA determinations are complete. Preliminary analytical data indicate significant variations in chloride and calcium for these samples. The relevance of these variations to TSNA is unknown at this time. Work is continuing on these samples.

C. **Plans:** Complete the data collection and evaluation of the burley fillers.

2057725233

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000

D. **Reference:**

Haut, S. A. Notebook No. 9078, p. 97.

III. ANALYTICAL PROCEDURES

A. **Objective:** To develop and maintain analytical methodology for TSNA or other compound classes where information is needed for determining relationships of TSNA to their precursors.

B. **Results:** Studies of aged smoke continued. Twelve smokings were done in the SS chamber to provide additional sample. Work continued on profiling the smoke samples on a DB-WAX GC column using both TEA and FID detection to locate the compounds of interest. Additional sample preparation steps to separate acid, base and neutral components were also incorporated in the sample preparation procedure. When this work is complete the GC methodology will be transferred to ARD for GC/MS identification of compounds of interest.

C. **Plans:** Continue studies of aged smoke. Continue to upgrade current analytical instrumentation and sample preparation for maximum efficiency.

D. **References:**

1. Morgan, W. R. Notebook No. 8905, p. 76.

2. Forte, R. A. Notebook No. 9133, p. 51.

2057725234

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000

PROJECT NUMBER : 6912
PROJECT TITLE : Tobacco/Smoke Relationships
PROJECT LEADER : R. R. Izac
WRITTEN BY : S. B. Hassam
PERIOD COVERED : December, 1991

I. CROSS SOLUBLES BASE WEB (CHEMISTRY)

A. **Objective:** To modify tobacco solubles and evaluate the smoke chemistry of fillers from various treated solubles and the appropriate base web.

B. **Results:** Final approval on a study to measure the effect of changes in cigarette construction on S/M activity was obtained.

C. **Plans:** Continue to generate model cigarettes.

D. **Reference:**

Hellams, R. Monthly Report. December 17, 1991.

II. SUPPORT FUNCTION: SAMPLE PREPARATION

A. **Objective:** To prepare chemical fractions and/or condensates as needed for biological and chemical analysis.

B. **Results:** Radiolabeled solanesol was isolated from chamber grown tobacco as requested by Chemical Research personnel. The radiochemical purity was better than 99% and the chemical purity was better than 98%. Samples of filler for use in the study of TSNAs and bound nicotine were analyzed by HPLC for alkali-releasable nicotine.

C. **References:**

1. Drew, S. Notebook No. 9138, pp. 22-25.

2. Hassam, S. Notebook No. 9114, pp. 172-173.

3. Izac, R. R. Notebook No. 8874, pp. 150-158.

2057725235

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000

PROJECT NUMBER: 8101
PROJECT TITLE : Cigarette Testing Services
WRITTEN BY : Kathleen A. Mitchell
PERIOD COVERED : December, 1991

MARKET ACTIVITY

A. **Objective:** To monitor and report new brand introductions and brand modifications for the domestic and international cigarette markets.

B. **Results:**

1. Domestic

Lorillard has re-introduced Spring Lemon Lights Menthol King Size and Spring Lemon Lights Menthol 100. Spring Lemon Lights Menthol Kings deliver 10 mg tar, 0.8 mg nicotine and 0.29 mg smoke menthol. Spring Lemon Lights Menthol 100 delivers 11 mg tar, 0.9 mg nicotine, and 0.33 mg smoke menthol. These cigarettes are being test marketed in Pittsburgh and Delaware. They were originally test marketed in March 1989 and were discontinued in late 1990.

2. International

Japan Tobacco Inc. has introduced Mila Schon Luxury Mild 100 20's (Box) and Mila Schon Menthol 100 20's (Box) to the Japanese market. These products have a slim circumference (23 mm) and a 98 mm cigarette length. Mila Schon Luxury Mild has a dual carbon on CA/CA filter and delivers 10 mg tar and 0.8 mg nicotine. Mila Schon Menthol has a 30 mm CA filter and delivers 11 mg tar, 0.9 mg nicotine and 0.4 mg smoke menthol. The blend of these products is similar to that of Cabin Prestige 100, containing 15% expanded tobacco, 14% expanded stems, and no reconstituted tobacco. Mila Schon cigarettes are packaged in a rounded-corner box. Deliveries of 9 mg tar and 0.7 mg nicotine are printed on the box.

C. **Plans:** To continue to monitor the domestic and international cigarette markets.

2057725236

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000

PROGRAM
INDEX

2057725237

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000

PROGRAM INDEX

Program Name	Project No.	Page
Basic Analytical Research	2307	8
	1762	41
Biological		
Antibodies	6902	66
Biosensors	6902	67
Cast Leaf RCB Process	2305	4
	1309	19
	2520	53
Chemical Senses		
Trigeminal Studies	2500	50
Combustion Research		
Mass Burn Control	2500	47
Computing Systems		
Expert Systems and Neural Networks	0008	31
	0008	32
Domestic Product Development	2108	1
	4018	12
	4031	14
	2520	53
Filter Research	2108	1
	2108	2
	2108	3
	4017	11
	1720	37
	1761	39
	2520	53
Flavors		
Thermal Flavor Release	2500	50
	2501	52
	2520	53
International Product Development	2108	1
	2108	2
LBA	6906	68

2057752238

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000

6912 71

Low Tar/High Flavor 2108 1
4031 14

Menthol 2108 2
2520 53
6505 65

New Expansion Processes 1812 25
1812 26

Operations Support
Adhesives 1757 38
1761 40
6502 62

Cigarette Monitoring 0008 33
8101 72

Cooperative Leaf Studies 2526 55
2526 56

Customer Complaints Taste/Odor/Stale 6505 65

Engineering Studies/Methods 1806 21
6503 64
6505 65

Entomological Support 1101 35
1101 36

Environmental Issues 2501 52
2527 58

Environmental Tobacco Smoke Studies 2500 49
2500 50

Flavor Development/Analytical Support 2307 8
1761 39
1761 40

Flavor Specifications/Certifications 1757 38

Materials Evaluation 1720 37
1761 40

Microbiological Quality Improvements 1902 42
1902 43

Packaging - Inks and Solvents 1761 40

Semiworks Support 0008 34

2057725239

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000

Project Ambrosia/Ash Tray Odor	6505	65
Project ART		
Process Development	1810	23
Project Tomorrow	2108	3
	4017	10
	1720	37
	2500	47
	2705	59
	6503	64
Reduced Sidestream/Paper Technology	2108	3
	2307	10
	2500	47
	2501	51
	2520	53
	6502	62
	6503	64
	6505	65
TSNA	1904	45
	6902	66
	6908	69
	6908	70
	6912	71

2057725240

Source: https://www.industrydocuments.ucsf.edu/docs/zhml0000